



## **Compensatory growth in yellowfin seabream, *Acanthopagrus latus*: effect on growth, digestive enzyme activities and antioxidant defense**

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### **Abstract**

An eighty-day feeding trial was conducted to evaluate the influence of different short-term fasting and re-feeding strategies on growth and physiological responses in yellowfin seabream, *Acanthopagrus latus* ( $2.4 \pm 0.2$  g) fingerlings. The fish were subjected to four different feeding regimes, the control group fed four times daily to apparent satiation throughout the whole feeding period, while the other three groups were deprived for 2, 4, and 8 days followed by 8, 16, or 32 days of refeeding ( $F_2R_8$ ,  $F_4R_{16}$ , and  $F_8R_{32}$ , respectively) in repeated cycles for 80 days. The fish in the control and  $F_2R_8$  groups had the highest and the lowest total length, respectively ( $P < 0.05$ ). Fish in the  $F_2R_8$  group relatively had higher catalase and glutathione-S-transferase activities than other groups ( $P < 0.05$ ). Furthermore, total protease,  $\alpha$ -amylase, and alkaline phosphatase activities in the  $F_4R_{16}$  and  $F_8R_{32}$  were higher than the  $F_2R_4$  and control groups ( $P < 0.05$ ). Overall, this study showed that compensatory growth in weight and length as well as digestive enzyme activities were observed in the  $F_4R_{16}$  and  $F_8R_{32}$ ; however, the increase in the activity of antioxidant enzymes in the  $F_8R_{32}$  group indicated that oxidative stress remained after 80 days of re-feeding in the liver.

**Keywords:** Compensatory growth, Fasting, Re-feeding, Antioxidant defense, Digestive enzyme, *Acanthopagrus latus*